

Experienced fatigue, pain and instability during sitting in persons with chronic SCI

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ALLRISC: Active Lifestyle Rehabilitation Intervention in aging Spinal Cord injury: a multicentre research program

onderwijs revalidatie women arbeidsintegratie dagbesteding sport

Introduction

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Wheelchair bound persons with a chronic SCI:

- Are in the wheelchair for about 13 hours a day
- Have less opportunities to change seating position
- Do all their activities while seated



Seating **comfortable** and **stable** is a prerequisite for optimal daily functioning.

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Research questions

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1. How do persons with a spinal cord injury experience **comfort** during sitting?

a) Fatigue

b) Pain

c) Location of pain

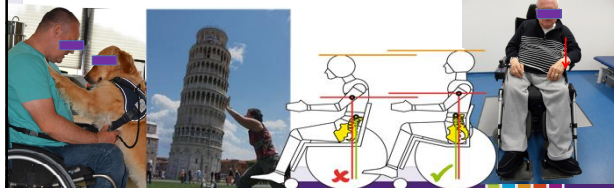


Research question

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2. How much stability is experienced during a) "normal" seating ?

Working against gravity ?



Research question

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2. How much stability is experienced during

b) **reaching** e.g. for a bottle (paraplegia) ?
or a cup (tetraplegia) ?



Research questions

3. Do people lack support in their wheelchair ?
 - a) where exactly?
 - b) Is fatigue related to lack of support?
4. Are people satisfied with their sitting posture?
 - a) and can it be improved?
 - b) Is satisfaction related to lack of support?



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Methods

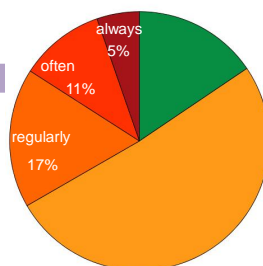
- A cross-sectional study using a self-report questionnaire
- **Subjects:** ALLRISC-dataset (N=265):
 - who use a wheelchair for daily mobility
 - TSI: ≥ 10 years
 - Age: >18 year when SCI was diagnosed;
at time of questionnaire: 28-65 years



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1a) Is seating fatiguing?

N=265	Fatiguing
never	16%
sometimes	51%
Regularly-always	33%

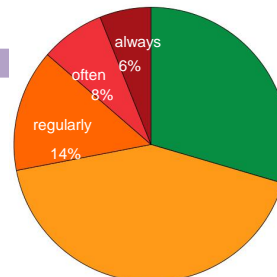


No sign. difference between PP and TP in occurrence of fatigue

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1b) Is seating painful?

N=265	Painful
never	30%
sometimes	42%
Regularly-always	28%



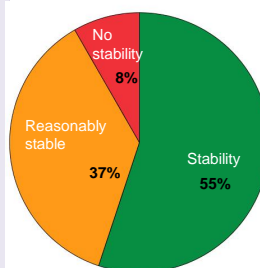
No sign. difference between PP and TP in occurrence of pain

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1c) Location and severity of pain?

Location	No pain 0	Not-little severe 1-2	Moderately- very severe 3 - 4 - 5
Neck	32%	50%	18% (14 - 3 - 1)
Back at shoulder height	26%	48%	27% (18 - 7 - 2)
Lower back	32%	41%	28% (13 - 9 - 6)
Side thorax	68%	27%	5%
Side lower back	59%	34%	7%
Ischial tuberositas	45%	39%	16%
Coccyx	54%	36%	12%

2a) Experiencing stability during normal seating?

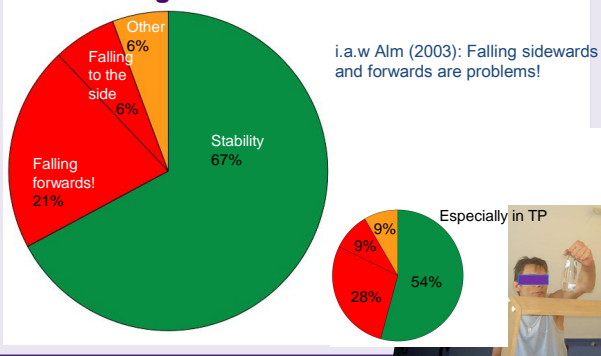


Differences in TSI, age, lesion level between groups?

- older than ■
- Tendency of more TP in ■ and ■



2b) Experiencing stability during reaching?



3a) Is support lacking in your wheelchair?

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	No	Yes	I don't know
Tetraplegia	68 %	21% (n=24)	11 %
Paraplegia	74 %	15 % (n=23)	11 %

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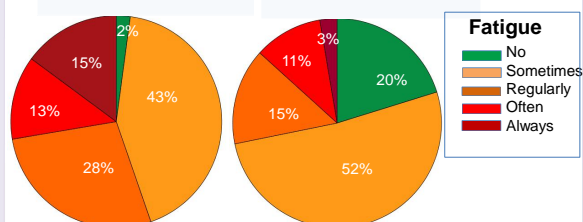
3b) At which location is support lacking?

Location	Paraplegia N=23 out of 157	Tetraplegia N=24 out of 107
Lateral to chest	0	10 persons
Back at shoulder level	8	4
Lower back	12 persons	7
Lateral lower back	9	6
Buttocks	5	0

Is fatigue related to experienced (lack of) support in the wheelchair?

Lacking support
-group (n=47)

Not lacking support
-group (n=188)



Satisfaction with seating in SCI

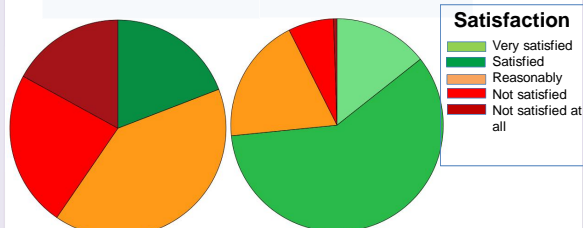
N=265	Yes	Reasonably	No
Satisfied with seating?*	58 %	28 %	14%
*Alm (2003): Only 43% (n=30) satisfied Samuelsson (2004): 48% good nor bad, 13% bad			
	Yes	I don't know	No
Can seating be improved?	48%	24%	28 %

helionare

Is satisfaction related to (lack of) support in the wheelchair ?

Lacking support
-group (n=47)

Not lacking support
-group (n=188)



Discussion

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- Are fatigue and pain and instability related to the wheelchair?
- Preliminary result: fatigue, pain and dissatisfaction seem to be more prominent in the group that lacks support in the wheelchair.
- We do not know if support is **objectively** lacking in the wheelchair!



Evidence for more support

Alm et al. * (2003):

- Both the examiner's classification and the subjects' reports showed the need for a better postural alignment
- Current wheelchair specifications and adjustments seem to:
 - inhibit a postural correction towards upright sitting
 - fail to provide sufficient lateral support



*Alm, M., et al., *Clinical evaluation of seating in persons with complete thoracic spinal cord injury*. Spinal Cord, 2003. 41(10): p. 563-71.

Clinical Relevance

Do wheelchairs always offer enough lateral trunk and back support?

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Solutions lateral and back support



Conclusions

- Persons with SCI frequently report fatigue, pain and instability during sitting.
- A majority believes their own sitting posture can be improved:
 - More support may be needed in the wheelchair in those who lack support
- Persons with SCI should be advised to have their sitting posture regularly checked, preferably by SCI-specialized seating therapists/ Seating Advisory Team.



Intervention Offering more support

Seating Advisory Team



Thank you for your attention



Are the ones that lack support in a certain location (e.g. lower back) also the ones that have pain in logical locations such as neck and lower back?

For example: kyfotic posture

N=19 who lack support in lower back: 12 have moderate to severe pain in lower back (reported 10 times) and/or back at shoulder height (7) and/or neck (5)

